

# URBAN ASSOCIATIVE GARDENS IN POOR NEIGHBOURHOODS OF SEVILLE AND PARIS: GARDEN PRODUCTIONS AND ACCESS TO FOOD

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Pourias, J., Puente Asuero, R., Aubry, C., Ducrocq, T., Zarandieta Jaén, A. (2020). Urban associative gardens in poor neighbourhoods of Seville and Paris: garden productions and access to food. Fondation Carrefour. ISBN: 978-84-09-22185-1

## Introduction

### Associative gardens in Europe (France-Spain)

Defined as types of vegetable gardens developed and managed collectively by a community of gardeners (Jassur 2013), associative gardens have progressed considerably in European cities since the early 2000s. In France, two main types of garden coexist: allotments, which are the modern version of nineteenth century worker gardens, and community gardens, which appeared at the beginning of the 2000s (Dubost 1997; Cabedoce and Pierson 1996; Basset, Baudalet, and Roy 2008). These two types of associative gardens were initially based on different models: allotments were based on large individual plots that were usually located in peri-urban areas, while community gardens were based on shared parcels that were deliberately close to city centres. Today, many hybrids exist between these two models, and in some respects they seem to be developing in the same direction. For example, at the impetus of national federations of associations, allotments - like community gardens - are currently experimenting with new garden models. In particular, “gardens at the foot of buildings”, established at the base of social housing projects on parcels that are markedly smaller than the classic allotment model, have come into existence over the past ten years. The idea is to re-infiltrate densely-populated urban areas that often have few green spaces, and to address social problems in these outlying neighbourhoods. Likewise, social sponsors and neighbourhood governments have adopted the cause of urban gardening and have created or facilitated the creation of gardens around the groups of buildings or neighbourhoods for which they are responsible.

In Spain, the history of associative gardens is more recent. The oldest and the largest gardens were created by local citizens' organizations (mainly neighbourhood and environmental non-profits) during

the 1990s and the early 2000s (Seguí, Maćkiewicz, and Rosol 2017; Puente Asuero 2012). The projects promoted by these associations were above all educational or related to the environment and the regeneration of urban wastelands. Many of these associative gardens were partially funded by certain Spanish city councils because they were a stake in local elections and a means of obtaining more votes. This phenomenon of the creation of associative gardens remained relatively marginal across Spanish cities as a whole until 2008, when it suddenly intensified with the beginning of the European economic crisis and an upsurge in unemployment in Spain and the large-scale impoverishment of the Spanish population (Guardiola and Guillen-Royo 2013). In 2008 alone, the number of associative gardens and actors involved in the creation of these gardens exploded in Spain. In response to these initiatives, which were essentially associative and citizen initiatives, governments and especially local authorities became interested in gardens as “anti-crisis” spaces. They saw them as a means to address the problems caused by unemployment and to counteract the effects of the economic and social crisis on food, in particular by maintaining the traditional Mediterranean diet undermined by this context of crisis (Kirby 2013; Prudhomme 2013).

### The food production of associative gardens

Knowledge of the production of associative gardens in cities in industrialized countries is scant and fragmented, although a growing number of researchers have focused on this over the past ten years. Studies on the subject show that the produce of associative gardens are mainly vegetables and small fruits, but also aromatic and medicinal herbs, pip fruits and stone fruits, eggs, and even honey (Langemeyer et al. 2016). In North America, certain publications also report the presence of livestock (mainly hens, bees, and rabbits) in gardens (McClintock, Pallana, and Wooten 2014).

The quantities produced vary widely: they depend on pedoclimactic conditions, the surface area farmed by the gardener, his or her know-how and practices, the varieties planted, etc. (Pourias, Duchemin, and Aubry 2015).

Certain gardeners produce significant quantities, accounting for a significant portion or even the entirety of their own consumption during the year (Pourias, Duchemin, and Aubry 2015; CoDyre, Fraser, and Landman 2015). For the majority of gardeners, however, the garden is only one source of supply among others. For example, Pourias et al. show that for the majority of the gardeners at associative gardens in Paris and Montréal, the garden provides only a portion of the fresh products consumed during the production season (Pourias, Aubry, and Duchemin 2016).

### Urban gardening and access to food

Urban gardens have been studied, particularly in North America, from various perspectives: as ways of producing fresh, sought-after and affordable food products for communities living in food deserts

(Gottlieb and Joshi 2010; Gray et al. 2014); as a means of empowerment in the fight for food justice in the context of post-industrial decline (McClintock, Pallana, and Wooten 2014; Corcoran, Kettle, and O’Callaghan 2017); and as nutritional education tools in programmes targeting different social groups (Gibbs et al. 2013; Heim et al. 2011; Robinson-O’Brien, Story, and Heim 2009; Davis et al. 2011).

In Europe, the spatial dimension of access to food appears to have been taken into account less often than in North America, whether in public policies or in the scientific literature. To explain the disparities in access to food, European literature tends to focus on the socio-economic features of individuals or households, rather than on the social and physical structures determining access to food. The differences in socio-spatial structures between North American cities and Western and Southern European cities can partially explain this difference of approach. Because of this, the possibility of carrying out actions directed at areas with less access to food via initiatives such as the establishment of community gardens has rarely been studied in Europe.

The economic crisis of 2008 seems nevertheless to have modified, to some extent, the perspective on the nutritional function of urban gardening and the importance of the location of gardens and their distribution across the city. This new focus seems to be partially related to the fact that the economic crisis has resulted in a proliferation of empty lots, and that gardening these spaces is a way to make them productive, thus allowing city-dwellers to benefit from the multiple advantages associated with gardening.

Initially, many journals and press articles relayed the discourse of certain organizations campaigning for urban gardens, arguing that they were “anti-crisis remedies”. Researchers later focused on the dynamics of the creation of gardens in European cities affected by the crisis (Pourias 2015; Delgado 2017; Partalidou and Anthopoulou 2017), and on the roles played by these gardens for urban populations facing significant upheavals impacting both the tangible and the intangible conditions of their existence.

It is the latter that have mainly been addressed in the recent literature: Partalidou et al. have emphasized that the expectations of Greek gardeners changed as they practised gardening (Partalidou and Anthopoulou 2017), and that their initial financial or productive motivations were often combined or even replaced by more intangible one, from the satisfaction of feeling useful to the feeling of belonging to a community. Seguí et al. mention the ability of gardens in Alicante (Spain) to constitute places of training or even professional reconversion toward agriculture for unemployed people (Seguí, Maćkiewicz, and Rosol 2017). Corcoran et al. examine the notions of re-empowerment via gardening, and the way in which the fact of producing one’s own fruit and vegetables led Irish gardeners to

participate in reflection on their consumption habits and on the neoliberal model, and to seek a way to reinvent “food commons” (Corcoran, Kettle, and O’Callaghan 2017).

Yet few of these studies on gardening during times of crisis have addressed the physical conditions of access to food for the people affected by the crisis. In southern European countries such as France, Italy, or Greece, there is evidence that one indirect consequence of the economic crisis was a deterioration in the conditions of access to quality food and food behaviours (Grigoriou 2013; Kirby 2013; Prudhomme 2013).

Aside from this corpus explicitly addressing the relations between urban gardening and the crisis, Martin et al. (2017) have instead focused on the role of produce from gardens in the food supply, and the food-related practices of women living in a poor neighbourhood of Marseille, France. These authors show that gardens did not allow the female gardeners questioned during the month of the study to secure a food supply. These female gardeners nevertheless shopped at a larger number of food outlets, purchased more fruit and vegetables, and overall purchased more expensive food products than women living in the same neighbourhood without a garden. From this, the authors concluded that gardens play a pivotal role in opting for a healthier diet. Even if the gardens produce only very small quantities in these cases, the practice of gardening leads to the consumption of more fruit and vegetables and the adoption of practices that are closer to nutritional recommendations (Martin et al. 2017). (The authors mention that one of the limits of the study was its duration of only one month, during the spring, and that the continuation of the study during the full production season would provide a better picture of the role of these gardens in feeding families.)

## Research subjects

Based on this literature review, the goal of the current study is to contribute to shedding light on the relations between urban gardening and access to food in poor neighbourhoods of the Parisian region (France) and Seville (Spain). The questions addressed are the following:

- What is the situation of gardeners in terms of access to food?
- What proportion of the fruit and vegetables that they consume come from the garden?
- Does having access to a garden allow them to have access to a greater variety of products or better-quality products?
- What is the importance of food production in the benefits that gardeners derive from their gardens?
- Does having access to a garden modify certain food practices (cooking, purchases)?

## Methodology

### Fields of study: selection and description

Gardens were selected in both regions according to two criteria: (1) in order to facilitate initial contact with gardeners and to shorten the preparation time before collecting data, we decided to select only gardens that were formally organized in associations; (2) the study explicitly targeted the poorest neighbourhoods, essentially because that is where we find a higher level of food insecurity: a study carried out in 2010 indicated that 6.30% of households were in a situation of food insecurity in the Parisian region, and this rate increased to 13.59% in neighbourhoods identified as “a priority for city policy” (PPV, *prioritaires de la politique de la ville*) (Martin-Fernandez et al. 2013). PPV neighbourhoods are those identified by the French government in urban policy plans as showing average higher rates of low income households, single-parent households, unemployment and social aid beneficiaries than in the rest of the city, and therefore requiring specific support in terms of public subsidies and measures. In Paris, all selected gardens are located either within Paris or in cities of the close suburbs (*Petite Couronne*) in “neighbourhoods which are a priority for city policy”.

Similarly, in Seville, the gardens selected were located in peripheral neighbourhoods of the city showing average higher rates of poverty and unemployment.

Garden name	Location	Structure behind the garden	Type and size of plots	Year opened	Number of interviews carried out with gardeners
Jardins des Mathurins	Avenue Mathurin Moreau, Paris 19ème	Paris Habitat (Social sponsor)	Individual plots from 10 to 12m <sup>2</sup>	2008	4
Jardins des Grands Pêcheurs	Cité des Grands Pêcheurs, Montreuil (93)	Local city government of Montreuil	Shared plot measuring 300m <sup>2</sup> , of which 100m <sup>2</sup> is cultivated	2014	2
Îlot 5	rue Vaillant-Couturier, Stains (93)	FNJFC	Individual plots from 90 to 135m <sup>2</sup>	2014	4
Jardin de l'Annapurna	Quartier du Noyer Doré, Antony (92)	Antony Habitat (social sponsor), FNJFC	20m <sup>2</sup> individual plots	2011	2

Jardin Charles Ferment	Quartier du Noyer Doré, Antony (92)	Antony Habitat (social sponsor), FNJFC	20m <sup>2</sup> individual plots	2011	3
Huerto Miraflores	Parc Miraflores, Seville		140 individual plots from 95 to 150m <sup>2</sup> , 20 shared 150m <sup>2</sup> plots	1991	4
Huerto Torreblanca	Calle Pino Estrobo, Seville		76 individual plots measuring 80m <sup>2</sup> , 2 shared plots measuring 80m <sup>2</sup>	2007	6
Huerto Poligono Sur	Calle Victoria Domínguez Cerrat, Seville		11 individual plots measuring 25m <sup>2</sup> , 2 shared plots measuring 100m <sup>2</sup>	2013	4
Huerto Bellavista	Calle Cronos S/N, Seville		50m <sup>2</sup> individual plots	2012	3

Figure 1: Characteristics of the selected gardens

In Seville, the gardens of Miraflores and Torreblanca opened in 1991 and 2007 respectively, when the rates of unemployment were relatively low. Their creation is therefore not associated with a context of economic crisis. They were created for leisure purposes and contact with nature. In contrast, the Bellavista and Polígono Sur gardens opened in 2012 and 2013 respectively, as an initiative of families impacted by the economic crisis of 2008, in search for social and economic alternatives to improve their situation. Today, the objectives shown by these gardens have changed little by little, including in the Miraflores and Torreblanca gardens, as they are now more oriented towards food production for families rather than for leisure in nature.

In Paris, three out of four gardens selected were created by social housing landlords (Paris Habitat and Antony Habitat), following the demand of inhabitants (in the case of Paris 19ème) or on the initiative of the social housing landlord with the support of the city council (in the case of Antony). The objective was to create a collective place of leisure for inhabitants of social housing and to enhance the value of green spaces around these buildings in which the inhabitants had lost interest and inappropriate uses

had proliferated (drug dealing in particular). The garden of Stains is located in a garden city, and exists since its creation in the 1920s. It was originally designed to allow workers access to a garden where they could produce their own vegetables. This function, which had disappeared through time, was revived after the renovation of the neighbourhood in 2010. In all three cases, social housing landlords relied on local associations to create the gardens and launch gardening activities. In Stains and Antony, only inhabitants of the social housing can access the gardens. The garden of Montreuil is a collective plot which was created by an organization called “*Régie de Quartier*”. This organization launched a national programme to encourage the creation of CGs in the neighbourhoods they work in, which led to the creation of several CGs, including the garden of Montreuil.

## Collection of data

### Meeting – presentation of the project

At the beginning of the growing season, a launch meeting was organized at each of these gardens to inform gardeners about the research project. In general, this meeting was organized with the help of a representative from the garden, such as the president of the gardeners’ association. Posters were put up in the garden a week prior to the meeting, and we also counted on word-of-mouth to inform gardeners in advance of this meeting.

During this meeting, we presented the goals of the research to the gardeners: to study the relationships between gardening, access to food, and food habits. Afterwards, we presented the main stages of the project to them as well as the operation of harvest booklets. At the end of the meeting, we collected the telephone numbers and emails of gardeners interested in participating in the study.

### Interviews

At the latest one week after launch meetings, semi-structured individual interviews were organized with the gardeners identified during the meeting. Four subjects were addressed during these meetings:

- (1) The gardener’s relationship to the garden: the personal history of the gardener in terms of gardening activity and his or her frequentation of the garden, his or her goals and main motivations for coming to the garden, and the time spent and frequency of visits to the garden.
- (2) Garden products: choice of crops (depending on the season), the destination of harvests (Who consumes the products from the garden?), the use of harvests (Are products consumed raw or cooked, transformed or not, stored or not?), the assessment of the quality and quantity of the products harvested, the assessment of the contribution of harvests to the food supply of

the gardener and his or her household. In order to evaluate the latter aspect, we made use of a questionnaire developed previously in the context of community gardens in Paris and Montréal (Pourias, Aubry, and Duchemin 2016), in which gardeners were asked to select one of the following five options that corresponded best to their situation: (i) The food production of my garden is anecdotal; I almost never eat the products I harvest; (ii) I consume the vegetables from my garden very occasionally; (iii) The production of my garden covers 50 to 100% of my needs during the production season for at least one or a few products; (iv) The garden allows me to cover all of my vegetable needs during the production season; (v) The garden covers all of my vegetable needs for the year (self-sufficiency).

- (3) The gardener's food habits, especially with respect to fresh produce: opinion on the consumption of fruits and vegetables before and after starting gardening, cooking habits, food purchasing habits (places of purchase, frequency of purchases, selection criteria), etc.
- (4) The situation of the gardener in terms of access to food. Regarding the latter aspect, we mainly chose to evaluate "food security status" based on the version of the US Department of Agriculture's Food Insufficiency Indicator adapted by Bocquier et al. (2015).

At the end of this interview, if the gardener was willing to continue with the study, we provided him or her with a harvest notebook and access to a kitchen scale. The majority of the time, free access to this scale was provided to the gardeners of the garden in a collective space, such as the garden's cabin or a toolbox.

#### Harvest booklets

A previous publication (Pourias, Duchemin, and Aubry 2015) reported the development of a method for collecting garden production data. This method is based on the voluntary participation of gardeners, who weigh their harvests and write down the weights in a notebook – or the number of pieces for certain crops, such as greens – along with other data: the crop name, the date harvested, the way in which the harvested products were used, who consumed them.

In Seville, the harvest booklets were distributed to gardeners from the first week of April until the second week of June 2016. They were then retrieved during the last week of November.

In Paris, the harvest booklets were distributed to gardeners from the first week of April until the second week of May 2016. They were then retrieved during the last week of October.

#### Discussion guides for monitoring

Every ten days approximately, we monitored the filling in of their booklets with the gardeners, to check whether they had encountered problems, to fill in with them missing information (including the "note"



section where we wrote down with the gardener any useful information on how the garden products were used: special events, recipes, etc.), and to initiate discussion around the topic of garden products and food-related behaviours.

During these monitoring discussions, we interviewed gardeners on the recipes that they used to prepare garden products, any problem they might have with crops, the places where they had purchased fresh food products since last monitoring, and any new behaviours that may have stemmed from the garden (like tasting new products, testing new recipes, etc.).

We also noted when gardeners were away from the garden (for holidays or other reasons), to avoid misinterpretation of a lack of data in the booklet during a certain period.

## Processing of data

### Semi-structured interviews

Fourteen gardeners were interested in responding to a semi-structured interview in Paris, and seventeen in Seville.

In Paris, the interviews were recorded and then played back in the office in order to extract the sequences of interest to us. These sequences were then transcribed and categorized in a table allowing us to structure the data collected (example below for the “purchases of fruits and vegetables” category). The categories correspond to the sections of this article.

Items / GARDEN-Gardener	ANNAPURNA – Mrs Ph.
Date of the interview	05/05/2016
Places of purchase mentioned	Large supermarket (?), Antony Market
Types	Supermarkets, outdoor market
Number of places of purchase frequented	2
Choice criteria	“I go shopping at supermarkets, but I also still go to the market, for example, because there’s a good atmosphere... There I buy cheese, meat... And to the Antony Market, because the fruit and vegetables there are good quality”.

Figure 2: Example for the “purchases of fruits and vegetables” category

In Seville, due to a lack of time, the interesting sequences were directly transcribed during the interview in a table containing the same categories.

### Production data

Nineteen gardeners (11 in Seville from 3 gardens, 8 in Paris from 4 gardens) submitted their harvest booklet to us at the end of the study. We excluded from the dataset the analysis of the quantities produced by 4 Parisian gardeners: 3 of them started to fill out their booklet and stopped doing so after a few weeks, and another did not specify sufficiently precise quantities (“a handful”, “it’s available all the time”...).

The period for recording the quantities produced ranged from 6 to 22 weeks in Ile-de-France and from 8 to 27 weeks in Seville. There are many reasons for this large variation in recording periods: some of the Parisian gardeners went on holiday at the beginning of the summer and did not return to the garden in the autumn; others started to farm their plot late and therefore only started to have harvests relatively late. Another aspect of this variability is also explained by the date on which the gardeners received their booklet and were able to start to record their data. Lastly, the growing season in Seville lasts longer than it does in Ile-de-France: even if it is possible to farm throughout the year in Ile-de-France, the variety of crops that can be cultivated decreases from the autumn, and few gardeners continue to garden in the winter.

	April					May					June					July					August					September					October					November				
	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48					
Paris																																								
Mr P. (20 w.)																																								
Mrs B. (10 w.)																																								
Mrs H. (14 w.)																																								
Mrs P. (8 w.)																																								
Sevilla																																								
Mr B.T. (13 w.)																																								
Mr D. (9 w.)																																								
Mr D.P. (35 w.)																																								
Mr Di. (12 w.)																																								
Mr F. & Mr S. (9 w.)																																								
Mr G. (23 w.)																																								
Mr Ga. (18 w.)																																								
Mr J.V. (14 w.)																																								
Mr M.D. (22 w.)																																								
Mr R. (22 w.)																																								
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Table 1: Recording periods for harvests at the gardens monitored

In order to be able to compare production per gardener across an equivalent number of weeks, we weighted production data based on the number of weeks during which harvested products were recorded. The results presented below are therefore expressed in kilograms per week.

## Results

### Gardeners and their food

#### The profiles of the gardeners surveyed

In Paris, out of the 14 gardeners surveyed, 3 were men and 9 were women. Five were retired, 8 were working, 1 was unemployed. Five had young children to support.

In Seville, out of the 17 gardeners surveyed, 14 were men: 10 were retired, 4 were unemployed, and 3 were working. Twelve had children to support, 8 of whom were responsible for the needs of adult children.

#### The food insecurity of gardening households: contrasting situations in Paris and Seville

At Parisian gardens, the 14 gardeners interviewed responded that they *“could eat all of the food that they wanted”*. Quite often, this was supported by an argument making use of both the pleasure and the nutritional dimensions, with a certain desire or even pride with respect to maintaining nutrition as a priority in everyday life, even in a difficult context.

***“We don’t eat out every day but... I know that the basic purpose of allotments was that: for families that didn’t have the luxury of buying lots of things, but that has never been our case”.***

***(Mr B., Ilot 5, Stains)***

***“[Food] is essential: you have to eat, to keep alive ... To live... Even in times of crisis, you can save money on other things, but food is the priority”.***

***(Mrs B., Mathurins Gardens, Paris)***

Maintaining an unlimited food supply appears to be a unanimous goal among Parisian gardeners. Many of them however alluded to their “luck” in being able to maintain this freedom, as opposed to other gardeners, who appeared to them to be in need. In this case, products from the garden sometimes served to “balance” their situation and that of their gardener neighbours who were “needier”.

***“I gave some chard to someone in the garden... We are comfortable financially, but that’s not the case for everybody”.***

***(Mr F., Jardin de l’Annapurna, Antony)***

With respect to this assessment of the gardeners questioned regarding the situation of other gardeners, two partially plausible explanations can be considered. First, it is possible that we more easily met with the people that were more financially “comfortable” due to the fact that gardeners in a more difficult situation probably preferred to avoid a discussion around this subject with a stranger. In this respect, we note that none of the 14 Parisian gardeners interviewed had a profile corresponding with the profiles of people most commonly affected by food insecurity for financial reasons (Bocquier et al. 2015), namely young people, and most often women living alone responsible for children. Second, it is also possible that the gardeners questioned tended to overstate and thus to highlight their relative comfort and their ability to “be charitable” with the people less fortunate than themselves in the garden.

In the gardens in Seville, the individual situations of gardeners were more variable. Out of the 17 gardeners interviewed, 9 respondents said that they could “*eat all of the foods that they wanted*”, 1 stated that he “*had enough to eat, but not always the foods that he wanted*”, and 3 claimed that they “*sometimes did not have enough to eat*”. Last of all, the 4 gardeners from the Poligono Sur garden did not wish to respond. One of these gardeners (a woman) nonetheless mentioned a very tight food budget of €200 per month to feed ten people.

***“At home, we eat all sorts of things, but we can never indulge in whims”.  
(Mr D., Huerto Torreblanca, Seville)***

### Fruit and vegetable purchases

The places of food purchases mentioned during the interviews concerned only fruit and vegetables purchased in addition to products harvested in the garden.

Of the 14 Parisian gardeners interviewed, 9 shopped at markets (including resale markets and producer markets), 3 at “discount” supermarkets, 2 at normal supermarkets, 4 at local neighbourhood stores (local grocery stores, Paris subway stands), 1 at an organic store, and 2 did not respond to this question. Of the 5 gardeners shopping at normal or discount supermarkets for their fruits and vegetables, only 2 exclusively shopped at these places. The other 3 also shopped at other places, especially markets. Regarding markets, only one gardener indicated a preference for a market offering producer stands, whereas another stated that he knew that the products from the market where he shopped came from the wholesale market, and 6 made no distinction between producer stands and resale stands.

Of the 17 Sevillian gardeners, 14 shopped at conventional supermarkets (including 8 exclusively at supermarkets), 5 at neighbourhood stores (grocery stores, produce stores), 3 at markets (without a distinction between producer and resale markets), 1 at discount supermarkets, and 1 did not respond.

Among the gardeners from Ile-de-France, compared to statistics recently published by the ANSES in the report from the INCA 3 study (ANSES 2017), we note an over-representation of outdoor markets among the places of purchase frequented for the purchase of fruit and vegetables (64% of gardeners made purchases at markets, compared to 25.2% of residents of Ile-de-France for fruit and 27.6% for vegetables on average, according to the INCA 3 study). Among the gardeners from Seville, conventional supermarkets appear to be the place of purchase of choice. According to the Report on Consumption and Food in Spain 2016 (MAPAMA 2017), large and medium-sized supermarkets (41.3%) are Spanish consumers' place of purchase of choice for their fruit and vegetables. Local stores (grocery stores, produce stores) account for 33.8% of fruit and vegetable purchases, outdoor markets 14.6%, "discount" supermarkets 10.3%, and e-commerce 0.4%.

In Ile-de-France, the selection criteria mentioned by gardeners concerned the variety or range of products offered (4 gardeners in 14), the quality of products (3 out of 14), the origin of the products (2 in 14), the price (3 in 14), the atmosphere of the place of purchase (2 in 14), and geographic proximity (1 in 14).

***"I go shopping at large supermarkets but I still go to the market, for example, because it has a nice atmosphere... There, I buy cheese, meat... And to the Antony Market, because the fruit and vegetables there are good quality".***

***(Mrs P., Jardin Charles Ferment, Antony)***

In the words of the gardeners themselves, in addition to the selection criteria mentioned above, shopping at an outdoor market appears to constitute not only a means of supply but also a hobby. The interest of the market resides in the variety of products available, their supposed quality, the possibility of discussing the products and their price with sellers, as well as the fact of being a part of life in the neighbourhood and participating in a "social" moment. This echoes the motivations described by people belonging to an associative garden (Pourias, Aubry, and Duchemin 2016).

Shopping at the market does not appear to be correlated with significant time availability, because it equally concerns working gardeners (5/8) and unemployed or retired gardeners (4/6).

In Ile-de-France, few gardeners indicated difficulties in the accessibility of fruits and vegetables for their daily purchases. Only one female gardener explained that she shopped at a neighbourhood grocery store for a lack of other stores, due to her difficulty in moving across large distances. Many

gardeners mentioned “ethnic” stores to purchase products outside of the range of products classically offered on French shelves.

***“I go to Stalingrad or Château rouge [market]... Sometimes I even take the subway, and they sell okra at the exit”.***

***(Mrs M., Mathurins Garden, Paris)***

With respect to the “price of products” criteria, only 3 gardeners from Ile-de-France mentioned that prices were a selection criterion when purchasing fruits and vegetables. In fact, as noted above, some gardeners stated that they were very intent on maintaining a dimension of “pleasure” in their diet, which they associated, in their discourse, with the fact of excluding budgetary calculations at the time of their purchases – nonetheless within the limit of the “reasonable”, as the citation below shows:

***“Sometimes I don’t even look at the price. I know that the kids want it and that’s it. Isn’t that what you work for?”***

***(Mrs H., Îlot 5, Stains)***

Buying fruit and vegetables is therefore primarily described by gardeners from Ile-de-France as a source of pleasure and not a budgetary constraint. The above citation nonetheless shows the ambivalence of these words, which on the one hand exclude the wish to save money on food, but which nonetheless include the effort to purchase products at the best price, or at least at prices deemed to be “reasonable”.

In Seville, gardeners’ selection criteria seem to be oriented more towards the geographic proximity of places of purchase and the prices offered, as well as at the possibility of purchasing large volumes.

***“I shop at Carrefour or Mercadona. There isn’t a market in the neighbourhood”.***

***(Mr D., Huerto Torreblanca)***

***“I go to the supermarket with my wife. We do a big shop once a week”.***

***(Mr G, Huerto Miraflores)***

#### [A strong and long-standing interest in cooking](#)

During conversations with Ile-de-France gardeners on the ways that they used and cooked garden products, we noted the importance that they granted to the preparation of food. This seemed to be

confirmed by the fact that all of those interviewed owned cooking equipment (food transformation and conservation).

For all of the 14 gardeners from Ile-de-France with whom we met, this interest in cooking was already present before they had access to the garden, and no gardener considered that the fact of having access to the garden changed his or her way of eating, whether from the point of view of quantities of fruit and vegetables consumed or from that of their variety. We note that this may appear contradictory to their descriptions of their garden produce, as they often emphasized its original nature, and stressed that the garden allowed them to produce foods that were difficult or even impossible to find on sale.

Gardeners in Seville also often spontaneously mentioned cooking. However, contrary to those in Ile-de-France, 6 out of the 17 gardeners interviewed believed that the garden had changed their way of eating. Of these 6 people, 1 stated that he consumed more fruit and vegetables than before joining the garden, and 6 indicated that they consumed new vegetables. For the latter, the garden appeared to have been a factor in the diversification of the products cooked.

***“I eat more variety [now that I garden]... And I discovered that vegetables can be cooked in thousands of different ways”.***

***(Mr P.J., Huerto Bellavista, Seville)***

***“My way of cooking hasn’t changed... I cook the same as before, but it’s true that we have more variety now”.***

***(Mrs D., Huerto Poligono Sur, Seville)***

## **Garden produce: characterization and place in gardeners’ food supply**

### Quantities produced in gardens

The 5 most common crops at gardens in Ile-de-France, in terms of quantity, were tomato, zucchini, green beans, potato, and lettuce (in order of total quantity produced on the plots studied). In Seville, the 5 most-produced crops were tomato, potato, zucchini, bell peppers, and eggplant. The range of vegetables and small fruits (strawberries, blackberries, raspberries) farmed in the gardens nevertheless varied: excluding aromatic herbs, we recorded 15 vegetables produced in gardens in Ile-de-France and 31 in Sevillian gardens. No stone or pip fruits were produced in the gardens studied: in the majority of cases, internal garden regulations prohibited planting trees for several reasons. The first reason is practical: trees are prohibited so that they do not block the sun of other garden crops. The second reason is related to garden governance. Both in Seville and in Paris, gardeners belong to

garden management associations: they can farm the plot that is allocated to them but are not the owner of it. Because of this, and because trees are perennial crops by nature (and often require multiple years before becoming productive), associations often prohibit gardeners from planting them.

The total quantities produced per gardener during the recording period varied considerably from one gardener to another: from 2 kg to 117 kg in Paris and from 61 kg to 531 kg in Seville. The most productive months were July and August in the Parisian region and June and July in Seville. In Seville, the average quantities produced ranged from 5.3 kg to 34.3 kg per plot and per week. In Paris, the quantities produced ranged from 0.2 kg to 5.8 kg per plot and per week. For comparative purposes, the *Agence française de sécurité sanitaire de l'alimentation, de l'environnement et du travail* [French agency for food security, the environment and work] recommends consuming five 80 g servings of fruit and vegetables per day, in other words 2.8 kg per week per person (ANSES 2017).

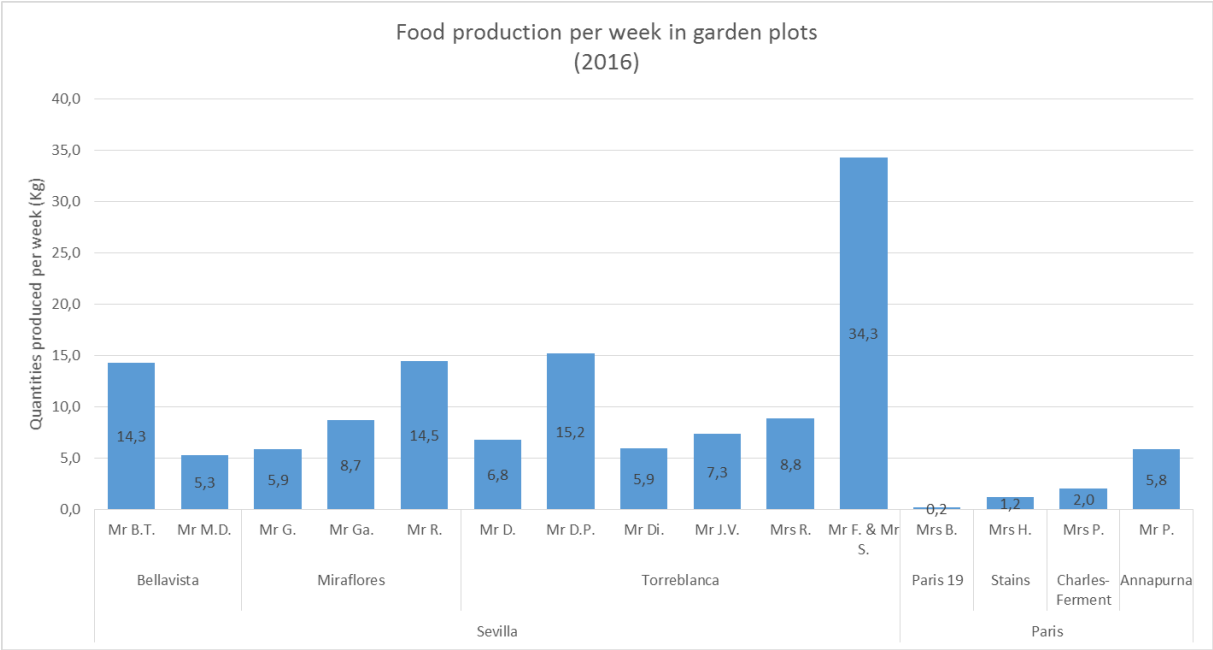


Figure 3: Food production per week in garden plots (2016)

These differences are explained by multiple factors: as the climate is milder in Seville, the production season is longer. The characteristics of gardens also account for many of these differences: plots are larger in certain gardens in Seville covered by the study, and the production potential there is therefore greater. Multiple factors related to the profile of gardeners also come into play to explain the differences in production between Parisian and Sevillian gardens: the time available (80% of Sevillian gardeners were % retired or unemployed, whereas more of the Parisian gardeners were working people); the gardeners’ know-how (in Seville, gardeners more often mentioned proximity to cultural activity, whether through their family origins or professional past); and access to certain production resources. Many Sevillian gardeners have relationships with the surrounding countryside and



exchange practical advice with peri-urban farmers, as well as inputs: manure, seeds, plants, etc. Sometimes these exchanges are carried out informally at the gardener's initiative. At other times, they are organized collectively at garden level. In the Parisian region, we rarely found this type of relationship with peri-urban agriculture, which is much more difficult to access because it is more distant in time and space than it is in Seville. The gardeners of the two gardens in the Parisian region also complained about the difficulty of obtaining compost, along with the lack of the involvement of the association to which they belonged, in providing them with good quality inputs.

#### Contribution to the food supply of gardeners' households

In Paris, 11 out of 14 gardeners identified with the following statement: "The products from my garden cover 50 to 100% of my needs during the season for at least one or a few products". For example, this is the case of these two female gardeners, who thus described the place of their harvests in their consumption of fruits and vegetables:

***"It's a good thing, because last summer, I didn't buy any cucumbers at all... I had plenty, and it was the same for tomatoes, none at all, and cherry tomatoes as well... None at all, for several months... [I also had] plenty of green beans as well".***  
***(Mrs M., Jardin des Grands Pêchers, Montreuil)***

***"The majority of what I grow is during the warm season. From July to October, I don't buy any more potatoes... When I don't have any more bell peppers, I don't buy any more, and the same goes for herbs and coriander. During the warm season, it's true that the garden lets you save money on certain fruits and vegetables".***  
***(Mrs G., Jardin de l'Annapurna, Antony)***

Two gardeners identified with situation 2: "I consume the vegetables from my garden occasionally", whereas one gardener positioned himself in situation 4: "The garden allows me to cover all of my fruit and vegetable needs during the warm season (and occasionally during the off-season)".

In Seville, 6 gardeners identified with situation 3, 5 with situation 4, and the 4 gardeners from the Poligono Sur garden identified with situation 2. Two did not answer because it was their first year harvesting and they therefore had no harvest at the time of the interview. At the latter garden, the plots were smaller and the garden was more recent than the others. It was located on a plot of land that had recently started to be farmed once again, and therefore had a mediocre-quality soil. Moreover, as opposed to other Sevillian gardens, the Poligono Sur garden had no irrigation infrastructure. All of these elements appear to have led to lower production levels.

***“This garden is a marvel. During the summer especially, I don’t buy any more tomatoes or bell peppers. During the rest of the year, we don’t buy lettuce, for example”.***

***(Mr G, huerto Miraflores, Seville).***

***“I wish my garden would give me Iberian ham! (laughs) But because that’s not possible, and because on top of that the garden is really small and there are a lot of members in the family, the garden only occasionally covers a small portion of our food”.***

***(Mr G., huerto Poligono Sur, Seville)***

Some Sevillian gardeners transform the products from the garden to preserve them, which allows them to be able to stagger the benefits of their production across the year to a certain extent.

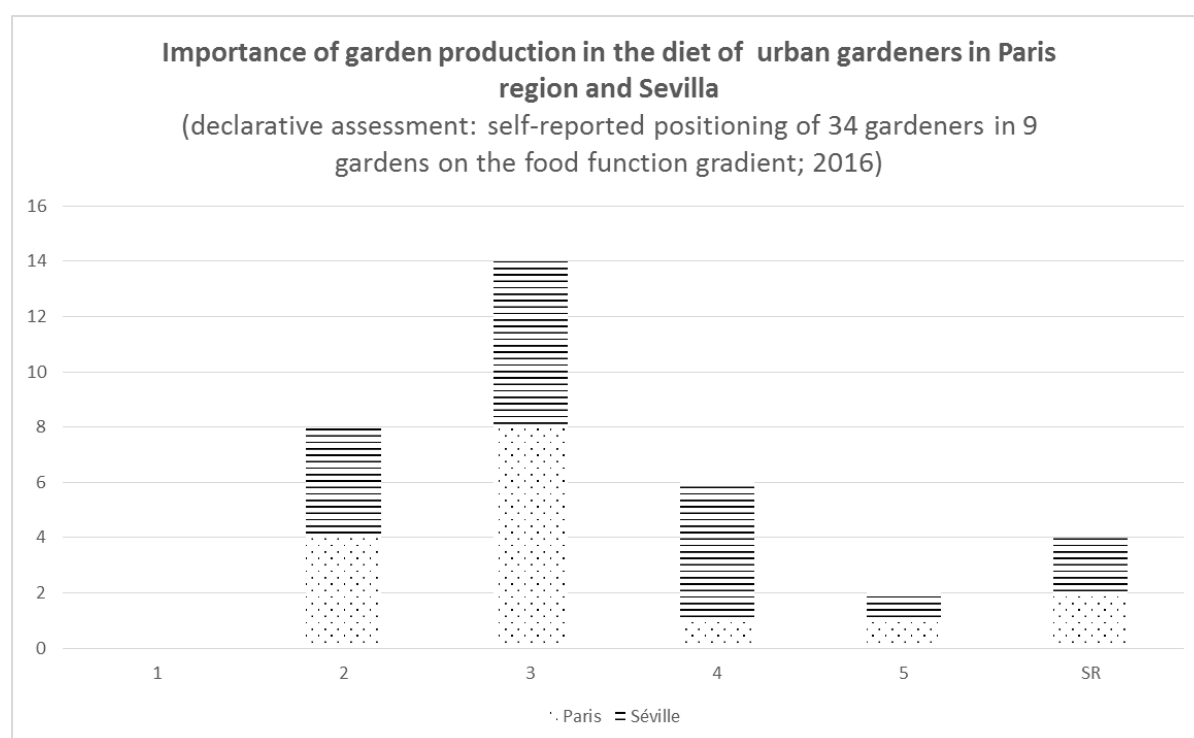


Figure 4: Importance of garden production in the diet of urban gardeners in Paris region and Seville

### The garden, a source of “exceptional” products

Products from the garden are often described as “exceptional” owing to their perceived quality (taste, freshness, sanitary features) as well as their rarity. The garden has thus been presented as a source of products that are difficult to find in stores:

***“There are even beet greens, which are impossible to find and better than beets. I made them into a frikandels... I make a sauce... The same for mint: we like its leaves to make tea, and Swiss chard is easy and delicious”.***

***(Mr F., jardin Charles Ferment, Antony)***

Like Martin et al., we have found that gardens are a place for the affirmation of people's food culture, often inherited from childhood but sometimes constructed later, during adulthood, while travelling. This is conveyed by the choice of particular crops, for example, when gardeners mention dishes prepared from garden products, many of them mention recipes learned during childhood.

Gardeners also emphasize the quality of their harvests, bragging about their taste and the fact that they know how they were cultivated and where they come from.

***“The products from my garden have more taste, more smell, and that gives me more confidence, because it was me who planted them with my hands (...)”***

***(Mr P., huerto Torreblanca, Seville)***

***“The zucchini from my garden my daughter will even eat raw. Whereas from Cora, I'd never let her eat them without washing them. (...) Things from the garden don't have to travel kilometres to end up on your plate”.***

***(Mrs G., Jardin Annapurna, Antony)***

With respect to the perceived quality of garden products, Pourias, Aubry, and Duchemin (2016) note that: *“In terms of harvesting and preserving products, the gardeners' practices resemble those of market gardeners in short supply chains, which a study has already shown to yield tastier and more nutritious produce (Bressoud and Pares 2009). The practices involved in long supply chain commercialization, such as harvesting before maturity and the selection of fruit and vegetable varieties based on technical criteria (shelf life, size, firmness, resistance to transport conditions, etc.) rather than taste criteria tend to reduce the organoleptic quality of produce. By contrast, gardeners generally choose varieties for their organoleptic qualities and not for advantages in terms of conservation and firmness. They harvest produce at maturity and generally store it for a short period”.*

The exceptional nature of garden products also pertains to what Martin et al. call, according to Fischler, the “principle of incorporation”, and which they describe as follows: *“[...] savoring the produce from the garden symbolically incorporates the energy, attention, work, and patience that the gardeners used throughout the process of cultivation”.*

***“The things that I buy at Cora, I don’t have any problem with throwing them out, although I say that but I throw them into the compost. Things from the garden, never. They’re good and they’re precious”.***

***(Mrs B., Jardin Charles Ferment, Antony)***

#### Budgetary aspects

The garden thus seems to contribute at least partially to the gardeners’ fruit and vegetable supply. Some of them therefore see it as a way of saving money, or at least of having access to higher-quality products that they would not be able to access if they had to buy them.

***“ I was retiring soon and I knew that I wouldn’t have much to spend, and to occupy my time... I jumped on it. The first goal was to spend less money on food”.***

***(Mrs P., Jardin Charles Ferment, Antony)***

***“That’s one of the reasons why we planted the garden... I’d like to eat 5 fruits and vegetables a day, but you have to pay for them”.***

***(Mr P., Jardin Annapurna, Antony)***

Yet, in view of the size of their harvests, which are at times small, and the expenses spent on the garden (seeds, inputs, decoration), gardeners often put the savings made through the garden into perspective:

***“You put money into the garden, for seeds, for fertilizer... But I still think that I save more than I spend”.***

***(Mrs E.R., huerto Torreblanca, Seville)***

When these monetary aspects are mentioned, the majority of gardeners, both in Paris and in Seville, point out that the potential financial benefits that they derive from the garden are not their main motivation:

***“Yeah, it saves me money! In any event, even if I lost money, I’d still do it, otherwise I’d die of sadness at home”.***

***(Mr H., huerto Torreblanca, Seville)***

### Garden harvests benefit people other than the gardeners and their family, voluntarily or not

While the majority of the products from the garden are destined for consumption by the gardener and his or her family, exchanges and gifts appear to be common at all of the gardens studied.

These gifts are mainly directed at the extended family, at times for the purpose of maintaining ties with children who have left home, and to a lesser extent are given to colleagues and friends. These findings are consistent with those of Pourias et al. (2014).

Such gifting can also take place within the garden between gardeners. In this case, the gifts often call for gifts in return: the products thus exchanged concretize the social network of the garden, affirming the active participation of givers and recipients and consolidating their status within this network. The failure to make counter-gifts can lead to negative feelings or dissatisfaction in the relationship:

***“[There are people] that don’t pay for anything! [Note: in the context of the discussion, they do not pay for anything in the garden: seeds, fertilizer, etc.] Everybody can do what they want... But then afterwards, they come: ‘Oh, Maria, can you give me that? Oh, Maria, can you give me this?’ But I buy things too, and nobody gives me anything!”***

***(Mrs B., Jardin des Mathurins, Paris)***

Some gardeners see these gifts as an act of charity. For example, many Sevillian and Parisian gardeners told us that they give a portion of their harvest to gardeners whom they believe are in need.

In gardens in the Parisian region, children in the neighbourhood are also often mentioned as the beneficiaries of these gifts. In this case, gifting fruits and vegetables can be a way of lessening tensions. Gardens are sometimes located in the immediate vicinity of playgrounds for the youngest children – or are sometimes even set up instead of and in the place of these playgrounds.

***“We were gardening and there were kids that would bug us. They would walk in front of us to provoke us and do mischief. [We made them come into the garden], the kids wanted to give us a hand and all of a sudden, they got caught up in the game and asked me a bunch of questions...”***

***(Mr F., Jardin Charles Ferment, Antony)***

Yet not all gardeners wish to freely distribute the fruits of their effort, a fortiori, with strangers. One gardener thus mentioned the possibility of receiving money in exchange for his produce:

***“If someone asks me for something, like that, without knowing me, I’d know what to say to them! If say they asked to buy things, that’s understandable, but giving like that... No”.***

***(Mr P., Jardin Annapurna, Antony)***

Some gardeners complain about theft: in this case, beyond the loss of the harvest itself, it is the absence of acknowledgement for their work or of thanks – in other words, the absence of compensation, even intangible – that gardeners deplore.

## Discussion

The methodology used for this study allowed us to collect a wealth of materials on garden produce and its place in gardeners’ food supply. Gardeners both in Paris and Seville showed interest in the subject of the study, and at the majority of gardens it was relatively easy to recruit participants.

The gardeners that spontaneously presented themselves to respond to our questions were mainly women in Paris and mainly men in Seville. Almost 80% of the gardeners surveyed were retired or unemployed, in Seville, whereas in the Parisian region over half of them had jobs. Without making assumptions as to the perfectly representative nature of this sample<sup>1</sup>, it at unquestionably least partially reflects the public that frequents these gardens. Based on the people interviewed in the context of the study, Sevillian community gardens are mainly farmed by retired men, whereas Parisian community gardens attract more women. In this respect, we note that the gardens surveyed in the Parisian region were not exactly “community gardens”: the gardeners did not call them by this name, and they were not managed by associations promoting the model of community gardens; two of them were even managed by the *Fédération Nationale des Jardins Familiaux et Collectifs* [National Federation of Allotments and Community Gardens]. It appears that the search for new allotment models, described in the introduction to this article, has had a result in terms of the diversification of the public affected, in any event at the gardens studied.

With respect to harvest booklets, in Seville all gardeners who received a booklet filled it out until the end of the harvest season. In Paris, half the gardeners who received a booklet gave up mid-way or only filled it out very sporadically. Multiple explanations are possible. First, it appears that gardeners seemed more interested in monitoring their production when they produced larger quantities. Second, the Sevillian gardeners had known the researchers in charge of the studies for a long time, as they had

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<sup>1</sup> The method for selecting participants, based on their voluntary participation in the study, may have excluded certain people who are less comfortable with the idea of answering questions during an interview, for example.

already participated in studies or had heard of them. In Paris, the gardeners were in contact with the researchers carrying out these studies for the first time. The relationship of trust that existed between the gardeners and researchers in Seville largely contributed to the success of this study, as the data collection method was based on the gardeners' active participation.

The data presented concern a limited number of gardeners as the device we used is difficult to implement and can only apply to a small sample. Moreover, the annual variability is significant: this variability is inherent to agricultural production in general, which is subject to the climate. To compensate for this variability, it would be necessary to pursue the study over a number of years. This was not possible in this case, mainly due to the fact that monitoring the gardeners participating in the study required a significant effort, which it was not possible for us to reproduce for a second year.

This study showed the variety of garden produce and its importance for gardeners. From a quantitative standpoint, gardens occasionally provide a significant proportion of the fresh produce consumed by the gardener and his or her family. Therefore, through the recording of the quantities harvested in gardens, we found that the average quantities produced over the monitoring period – in other words, the most productive months – could theoretically represent a sufficient contribution in terms of weekly consumption of fruit and vegetables for 2 to 12 people at the garden plots monitored in Seville, and from 0.5 to 2 people in the Parisian region. In Paris, this quantitative contribution remains relatively small, but it is no less important for the gardeners, who describe their produce as “exceptional”, owing to the nutritional and taste qualities that they attribute to it, as well as the care and energy spent on producing it. In Seville, the quantities produced were significant and can, in theory, cover a significant proportion or even the entirety of the fruit and vegetables consumed by a family.

Regarding the gardeners' situation with respect to food insecurity, we found that those whom we met in the Parisian region were not in a situation of food insecurity. Some of the gardens' produce nevertheless appeared to be given away in the form of one-time gifts to inhabitants of the neighbourhood deemed to be “needy”. In Seville, the gardeners with whom we met during the study were faced more with food insecurity for financial reasons, to differing degrees. It appeared that the garden therefore played a role in providing food for these gardeners, including a quantitative role, as some of them were retired people on small pensions, or were unemployed.

Parisian gardeners demonstrated a marked interest in their food generally: cooking, the origin of products, etc. Some of them even associated a “leisure” dimension with their food purchases at markets. This interest appeared to be longstanding and present prior to the practice of gardening, and no Parisian gardener appeared to consider that the garden had changed his or her eating habits. While this may initially appear contradictory with the enthusiastic description of the “exceptional” nature of

the products from their gardens, the explanation most likely resides in the way that the gardeners understood the question. The majority of Parisian gardeners considered that they had “abnormal” practices and that they paid more attention to their food than “the average”, even before having the garden. The fact of having the garden reinforced this feature by providing them with access to new products, without fundamentally changing their interest in their cooking and food. On the contrary, in Seville, almost one third of the gardeners with whom we met considered that the garden had changed their eating habits, either because they consumed more fruit and vegetables, or, and more often, because they consumed a greater variety of fruit and vegetables.

Therefore, two contrasting situations are present in Paris and in Seville: in the Parisian region, gardens seem to attract a public that is already sensitive to food, and that sees gardening as a likely opportunity to produce better-quality vegetables not found in stores, either because they are not available in stores, or because they would be too expensive. In Seville, the gardeners are primarily retired or unemployed men, for whom the financial dimension of the garden appears to be more important. The socio-economic and cultural contexts of these two urban areas differ, as does the physiognomy of the gardens. It is difficult to assess the exact proportion of these different factors to explain the differences observed. We can nevertheless posit that the European economic crisis of 2008, which had a significant impact on Andalusia, led to an increase in the unemployment rate and early retirement in large numbers, most likely drawing to these gardens a public that was more interested in the nutritional and financial potential of gardening.

## Conclusion

The economic crisis that hit Europe in 2008 appears to have shifted to some extent the perspective on the food function of urban gardening. During this study, we carried out semi-structured interviews with 31 gardeners from 9 urban gardens located in poor neighbourhoods in the Parisian region in France and in Seville in Spain. With the help of the gardeners, who actively participated in collecting data, we monitored their farming and food practices (places of purchase, transformation of products, etc.), for the purpose of understanding their situation in terms of access to food and the role of the garden in their food. Our results show that the gardens allow them to produce a large variety of vegetables in quantities that vary widely from one plot to another and from one gardener to another. We found that associative urban gardens play different roles in Paris and Seville: in the Parisian region, gardens seem to appeal to a public that is already sensitive to the subject of food, and which is seeking



the possibility of producing better-quality vegetables that they cannot find at stores. In Seville, the garden's public consists mainly of retired or unemployed men, for whom the financial dimension of the garden appears to be more significant. To explain these differences, over and above the specific features of the gardens and the individual aspirations of the gardeners, we can posit that the European economic crisis of 2008 was a key factor. The crisis, which had a significant impact on Andalusia and led to a steep increase in the unemployment rate and to early retirements in large numbers, probably drew to these gardens a public more interested in the nutritional and financial benefits of gardening.

This highlights the need to better understand the causes of food insecurity and to shine light on the reasons why people in a situation of food insecurity do not grow food in the gardens at the base of buildings in the Parisian region, whereas in Seville they seem to be more drawn to gardens. This study offers some explanation as to the functioning of gardens: the integration of Sevillian gardeners within formal and informal networks for the exchange of knowledge and production resources appears to partially explain the differences in production of these gardens, and the interest that people in a situation of food insecurity have in them. Our study shows that associative gardens can be the loci of the production of foods that are deemed to be of good quality by gardeners, and which meet their expectations. It would therefore be interesting to contemplate how gardens at the base of buildings in the Parisian region could become the means of qualitative and/or quantitative access to food by people in a situation of food insecurity, by adapting the physiognomy of gardens, connections with surrounding agriculture, the methods of distribution and transformation of products, and so on. This would also make it possible to further diversify the public using these gardens. From this point of view, the topic of the creation of ties between associative gardens and food aid structures could be further explored. Although one-time relations do exist between associative gardens and food aid (e.g. at certain gardens in Seville a portion of the produce is given to charity), it seems that these structures are highly disconnected and serve very different publics with respect to food. Questions concerning the time frame of these activities will have to be taken into consideration: while food aid can serve to address food access problems, gardens at the base of buildings allow for the production of quality fruits and vegetables by means of a regular investment over the long term.

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